



# **MISSOURI DEPARTMENT OF NATURAL RESOURCES**

St. Louis

Drinking Water State Revolving Fund Green Project Reserve  
Business Case

State Fiscal Year 2013 Intended Use Plan

Project Number DW291280-12

Loan Date: November 13, 2013

**Green Estimated Costs: \$3,079,331**

# **Water System Improvements for St. Louis, Missouri**

## **Business Case**

### **Summary**

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- The purpose of the project is to provide the Chain of Rocks Water treatment plant with improvements that include: the replacement of the old raw water pumping unit with a new 25 million gallon per day (mgd) pumping unit; replacement of the old finished water pumping unit with a new 15 million gpd pumping unit; and replacement of three (3) 78 inch steel pipe segments two (2) header vaults and plant service piping. The project also includes the following improvements to the Hall Street Manifold Chamber: the replacement of nine (9) 48-inch valves and piping; replacement of the existing software to model water quality issues; and the replacement and addition of approximately 2,220 feet of six-inch (6") water main; and all the necessary appurtenances to complete the project and have a usable system. The addition and replacement of the water mains for this project is to provide looping, to address system failures, such as water main breaks, and to provide the expected capacity due to the forecasted growth.
- SRF Assistance Amount: \$9,500,000.00
  - pipe replacement = \$1,365,153 = 14.4%
  - New 15 MGD Finished water pumping unit = \$766,578 = 8.1%
  - New 25 MGD Raw water pumping unit = \$947,600 = 10%

### **Background**

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- The water source for the city's water system comes from the Missouri and Mississippi Rivers.
- The distribution system consists of approximately 1,400 miles of water mains. The distribution system also includes a total system storage capacity of 145 million gallons.
- The city's drinking water system currently serves approximately 92,181 meters, with an average daily water demand of 135 million gallons per day (MGD) and a peak day demand of approximately 360 MGD. Recent history indicates that the water demand for the city has been steadily increasing. The future estimated connections to be served for the year 2030 will be approximately 1,622 with an average daily demand of approximately 202.5 MGD and 540 MGD for peak daily demand.

### **Results/Conclusion**

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- Additional benefits from water main replacement include reductions in unnecessary pumping and operation and maintenance expenditures, and eliminating potential health hazards associated with waterborne pathogens entering the water distribution system.

- Replacing the old, leaking water mains will increase water efficiency by decreasing the amount of water lost.